

PRACE NAUKOWE

Uniwersytetu Ekonomicznego we Wrocławiu

RESEARCH PAPERS

of Wrocław University of Economics

263

Quantitative Methods in Accounting and Finance



edited by

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Publishing House of Wrocław University of Economics
Wrocław 2012

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Typesetting: Comp-rajt

Cover design: Beata Dębska

This publication is available at www.ibuk.pl, www.ebscohost.com,
and in The Central and Eastern European Online Library www.ceeol.com
as well as in the annotated bibliography of economic issues of BazEkon
http://kangur.uek.krakow.pl/bazy_ae/bazekon/nowy/index.php

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Wrocław 2012

ISSN 1899-3192

ISBN 978-83-7695-274-1

The original version: printed

Printing: Printing House TOTEM

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A REVIEW OF THE MEASURES USED IN THE ASSESSMENT OF MUNICIPALITY MANAGEMENT

Summary: The article presents the essence of a municipality and shows some selected performance measures for the assessment of municipality management. These measures are divided into two groups. In the first group there are measures that can be used to assess the management of a whole municipality. The second group consists of the measures that can be used to assess the management of a city council. The summary indicates the principles of introducing entrepreneurship to municipality management.

Key words: municipality, municipality management, performance measures.

1. Introduction

According to the objectives of the structural reforms in Poland, the local government should serve citizens and investors who are, directly and indirectly, the main recipients of the actions performed to achieve the objectives of municipality's development strategies. Due to these reforms, municipalities now have a much broader range of competencies and to a large extent determine their own development.

The primary objective of a municipality is to act as a servant to citizens. Therefore, effective management of a wide range of public service is necessary in order to meet the collective needs of citizens [Wojciechowski 2003, p. 14]. Due to the systematic and conscious measurements of the actions, we can expect two effects, namely improving the quality of services and their effectiveness (achieving the same effects using fewer resources).

On the basis of the above consideration, the main goals of this paper are to present the essence of the municipality and present selected indicators for the assessment of municipality management. These measures were divided into two groups, namely the measures which may be used in the assessment of municipality management as a whole and the measures which may be used in the assessment of city council management.

2. The essence of a municipality

In the literature there are many views on the term “municipality”. This concept will be defined differently by urban planners, sociologists, geographers, lawyers or economists.

The complexity of the issues is evident in the definition by W. Peński. The author believes that “municipalities are complex ecological, social, economic and spatial systems, and their management should be primarily based on balancing their development to such an extent as required to meet the needs of current residents, while taking into account the aspirations of future generations” [Peński 1999, p. 12].

R. Brol believes that from the point of view of macroeconomics, “a municipality is an entity of local government, managed by a public authority, equipped with economic, legal and administrative instruments necessary to enable intervention in the sphere of the local economy, and thus the competitiveness of location and conditions for the operators in a municipality”. However, from the point of view of microeconomics, “the municipality can be seen as a ‘multi-branch enterprise’, run by the municipality government and supervised by the city council, which sets the objectives of the economic policy” [Brol 2004, pp. 7–8].

For the purpose of this article, the definition of a municipality given by R. Brol and enriched with the elements of sustainable development was adopted. Therefore, a municipality is an entity of local government, which should be managed in accordance with sustainable development, by a public authority, equipped with economic, legal and administrative instruments necessary to enable intervention in the sphere of the local economy, and thus the competitiveness of location and conditions for the operators in a municipality.

Municipalities, despite their complexity and diversity, have some common features, which include [Borys 2000, pp. 23–24]:

- a large number of inhabitants on a relatively small area,
- relatively high economic and social potential,
- different spheres of interest,
- a large number of institutions and organizations operating within a municipality,
- close links of a municipality with its surrounding region,
- dependence of a municipality on widely extended and efficient technical infrastructure,
- a considerable use of resources necessary for a proper maintenance of a municipal entity,
- environmental degradation and its impact on the deteriorating conditions of life.

The last two points referring to the large consumption of natural resources and environmental degradation are deeply disturbing. The environment in which we live is to serve future generations. Caring for the environment and next generations is reflected in the concept of sustainable urban development.

The concept of “sustainable development” was first used in a report compiled by the World Committee on Environment and Development in 1978. In that document, sustainable development was defined as “the process of growth and change, which ensures meeting the existing needs without deteriorating the conditions for the future generations to fulfill their own needs” [Peński 1999, p. 31]. This issue was the main theme of the Conference of the United Nations “Environment and Development”, held in Rio de Janeiro in June 1992. During the conference five documents were adopted, the most important of which are the “Declaration on Environment and Development” and “Global Programme of Action – Agenda 21” [Raczyński 2002, p. 31].

The main objectives of the Declaration on Environment and Development are the introduction of sustainable development and ensuring a better quality of life. This declaration presents 27 principles allowing for the creation of a new order on Earth. The document “Agenda 21” is a program of specific measures whose implementation is a basis for sustainable development and environmental protection.

3. Municipality management

Municipality management can be understood as taking actions aimed at ensuring sustainable development [Peński 1999, p. 17]. Management, depending on the level of influence, is divided into general, specialized (sector) and operational [Markowski 1999, p. 16].

The general management concerns in particular:

- the formulation of municipality policy and determining strategic goals and objectives,
- implementation of this policy by all the organization levels of a municipality,
- coordinating, monitoring and evaluating the activities of entities that carry out tasks in accordance with an adopted municipality policy.

The general management covers an entire municipality and the responsibility for proper execution belongs to a president and a city council.

The general management of a municipality may be directed to the inside and related to the management of a city council as well as focused on the outside and related to managing a municipality as a whole.

Sector or specialist management takes place within the functional areas of a municipality. It may involve, among others, matters relating to housing, environment, public transport and waste management. In contrast, the operational management concerns the executive level in the administrative structure of a municipality, and refers to the activities of organizational units directly responsible for providing services to a population and implementing the tasks assigned to a city council.

For the purpose of this paper, only the general management will be discussed, specifically measures that can be used in the assessment of municipality management as a whole and the ones to evaluate city council management.

4. Selected measures of a management area

In order to ensure a reliable measurement of the achievements of a municipality, appropriately selected and designed measures should be used. Therefore, such measures should be [Duda et al. 2004, p. 21]:

- suitable for the objectives that an entity wants to achieve,
- clearly defined, with clear, unambiguous definitions, allowing for consistent data capture,
- up-to-date, generating data regularly enough to monitor progress and quickly enough to make resulting data useful,
- reliable, that is, sufficiently accurate and responsive to change,
- comparable with past periods or with other similar measures,
- verifiable, supported by clear documentation so that one can confirm the validity of the processes generating the measures,
- incentive, to encourage the exercise of appropriate actions, and not those unwanted or wasteful.

The aforementioned features of the measures are vital for the construction of an appropriate set of measures used in the assessment of municipality management. Tables 1 and 2 present some examples of measures to assess the overall management of a municipality and their target and alarming values (alarming indicates that a specified value is a prerequisite for the introduction of corrective actions).¹

Table 1 contains seven examples of measures for the evaluation of municipality management as a whole. The author's intention was not to indicate all possible measures, but only to signal their nature. For each measure, target and alarming values were shown. Obviously, these values are examples only and should be tailored to specific objectives and conditions for the functioning of a municipality.

The first measure shown in Table 1 is the percentage of city council officials/councilors/residents that support strategic goals. It indicates whether municipality's strategic objectives are understood and supported by different recipients of a strategy (officials, councilors, residents).

In order to calculate it, one needs to divide the number of officials/councilors/residents taking part in a survey who know and support strategic objectives formulated in a strategic plan by the total number of officials/councilors/residents participating in a survey.

The result multiplied by 100 gives the desired measure. Low levels of this indicator mean that respondents do not know or do not accept strategic objectives. In this case, recipients should be informed about these objectives (through the intranet, brochures, informal meetings, etc.) as well as the cause-and-effect relationships

¹ While discussing the measures mentioned in both tables, the author used the following works: Mitchell, Owsiany, Zawicki [2004, pp. 5–29]; Nieplowicz [2005, pp. 80–89]; Sztando [2008, pp. 67–80].

between their actions and strategic objectives. High levels of this indicator show that respondents understand and support the strategy of a municipality.

Table 1. Measures used in the assessment of municipality management as a whole

Performance measure	Target value (%)	Alarming value (%)
1. The percentage of city council officials/councilors/ /residents who support strategic goals	≥ 55	< 40
2. The share of net free funds in the total budget	≥ 10	< 2
3. The percentage of citizens who feel that the quality of their lives has improved	≥ 60	< 30
4. The percentage of charges paid from property taxes	≥ 95	< 85
5. The percentage of liabilities paid on time	≥ 95	< 75
6. The place in a city ranking published by economic and local press	not lower than a previous year	drop of two places compared to a previous year
7. The increase in the income of a municipality in percent	≥ 1.2	< 0.7

Source: author's own work based on Mitchell [2004, pp. 5–29]; Nieplowicz [2005, pp. 80–89]; Sztando [2008, pp. 67–80].

The next measure is the share of net free funds² in total budget revenues. It shows whether a municipality is able to fund local development initiatives, other than current tasks, from its own budget. This measure is calculated by dividing the total amount of net free funds by the amount of total revenue in a given year.

Low levels of this measure (less than 5%) indicate limited opportunities to support local development initiatives. However, the measure level at 25–30% is considered satisfactory, since it allows supporting development initiatives.

The third measure is the percentage of citizens who feel that the quality of their lives has improved. In order to calculate it, one needs to examine satisfaction among the residents of a municipality, and then divide the number of people who believe that the quality of their lives has improved by the total number of completed surveys. It is desirable that more than half of residents feel that the quality of their lives is improving.

The next measure is the percentage of charges paid for property taxes. It points to the effectiveness of a municipality in collecting revenues. The calculation of this measure is simple as actual revenues from property taxes in a financial year are divided by the amount of total property taxes due for a financial year.

From the point of view of municipality management, the level of this indicator should be 100%. If the value is lower than about 80%, then actions should be taken to clarify why these taxes are not paid.

² Net free funds are difference between overall budget income and current expence, decreased by the cost of debt (the sum of expenditure concerning capital installment, commission, debt service) [Mitchell, Owsiany, Zawicki 2004, p. 9].

The fifth measure is the percentage of liabilities paid on time. It indicates whether a municipality pays its liabilities on time. In order to calculate it, we divide the total amount of the liabilities paid on time for a year by the total value of the liabilities covered in a given year.

It is considered that the level measure at 90% indicates good management of a municipality. Obviously, one should seek the maximum value of the measure – 100%. However, the level of the measure below 75% should initiate investigation and corrective actions.

Another measure indicates a place occupied in a city ranking published by the economic and local press. In these rankings different criteria to assess cities are taken into account, thus results can be regarded as relatively objective. Therefore, cities should strive to maintain its position in a ranking. To be able get a higher place in a ranking, a long and consistent effort put into the development of a city is required.

The last indicated measure is an increase in the income of a municipality in percent. It shows a need for financial security to allow providing continuous services. To calculate this measure, one has to divide the income included in the budget of a current year by the income included in the budget of a previous year. The annual increase in the income of a municipality is a good sign, but it does not always guarantee covering planned expenses.

Table 2 contains eight examples of measures for evaluating the management of a city council. It needs to be emphasized that the author's intention was not to indicate all possible measures, but only to signal their nature. As in Table 1, the target and alarming values were presented for each measure. These figures are examples only and should be tailored to the specific operation of a city council.

The first measure is the share of administrative costs in the total operating costs of a municipality. It informs whether a council is decreasing its administrative costs. From the perspective of a municipality, each action that leads to lowering costs is beneficial. However, taking into consideration a high cost of bureaucracy, it is important to keep this measure at least at the same level.

Another measure is the average time for processing an application for a building permit (from submission to final decision, whether positive or negative). This permit is a decision depending on many officials working in various organizational units of a council. Thus, the speed of the decision-making process will reflect the quality and efficiency of communication procedures in a city council.

In order to calculate the measure, one should divide the number of days used to process all applications for building permits in a given year by the number of applications processed. For those applying for a permit, quick decisions are the best. Effective decision-making also positively influences the image of a municipality.

The next measures – the number of cases that can be settled “at a time” in one building and the number of municipal services which can be dealt with via the Internet – relate to the simplification of procedures and services of a city council. For an average citizen, it is important to reduce time spent at a city council to settle a matter.

Table 2. Measurement to assess the management of a city council

Performance measure	Target value	Alarming value
1. The share of administrative costs in total operating costs of a municipality	$\leq 15\%$	$> 30\%$
2. The average time for processing an application for a building permit (from submission to final decision, whether positive or negative)	≤ 20 days	> 60 days
3. The number of cases that can be settled "at a time" in one building	90% of the cases to be implemented in a given year	50% of the cases to be implemented in a given year
4. The number of municipal services which can be dealt with via the Internet	90% of the cases to be implemented in a given year	50% of the cases to be implemented in a given year
5. The percentage of customers evaluating the service at a city council as "satisfactory"	$\geq 75\%$	$< 40\%$
6. The increase of residents' satisfaction with the contact with officials on the basis of a ranking	5% higher than the level from a previous year	any reduction in comparison to a previous year
7. The degree of participation of city council officials in trainings, conferences	≥ 8 days per year	< 2 days per year
8. The percentage of city council officials who evaluate their working conditions as "good" or "very good"	$\geq 85\%$	$< 60\%$

Source: author's own work based on Mitchell, Owsiany, Zawicki [2004, pp. 5–29]; Nieplowicz [2005, pp. 80–89]; Sztando [2008, pp. 67–80].

The fifth measure is the percentage of customers evaluating the service at a city council as "satisfactory". It refers to the quality of service in a city council. To calculate the measure, it is necessary to carry out a survey among residents on the quality of the service at a city council, and then divide the number of people who believe that the quality of service is satisfactory by the total number of completed surveys. It is desirable that more than 75% of residents feel that the quality of the service at a city council is sufficiently satisfactory.

Another measure is based on a ranking evaluating the work of city council officials. It reflects the increase of residents' satisfaction with the contact with officials on the basis of a ranking. Such a ranking should encourage council officials to offer professional services to its citizens, leading to the reinforcement of the positive image of a city council. The level of this indicator should rise gradually from year to year.

The seventh measure is the degree of participation of city council officials in trainings and conferences. It shows the ratio of officials raising their qualifications to the total number of officials at a city council. Thanks to such trainings, officials should do their jobs more professionally and efficiently. This will be reflected in the increase in the satisfaction of citizens and a possible reduction in the costs of a

city council, for example, by shortening the time of certain procedures while dealing with citizens.

The last measure presented is the percentage of city council officials who evaluate their working conditions as “good” or “very good”. It illustrates officials’ satisfaction level with their workplace. This assessment will be influenced by the number of computers and Internet access at offices.

The measures presented in this section concern the problems of measurement and evaluation of municipality management because “you cannot manage what you do not measure” [Kaplan, Norton 2012]. An appropriate measure should be selected for a specific strategic objective and not *vice versa*. Obviously, one can use the experience of other cities or companies, but one always needs to remember the strategy of a municipality.

5. Conclusions

The definition of a municipality by R. Brol suggests that it can be seen as a kind of “multi-branch enterprise”. It indicates that there are some common features of municipalities and businesses. One of them is a need to choose between satisfying current consumption needs and investment. In both cases, it is advisable to prioritize future development. Obviously, there are differences between them, which result from the fact that municipalities are representatives of the public sector, whereas companies belong to the private sector.

However, despite these differences, there is no reason why a municipality could not become entrepreneurial. The rules of the introduction of the entrepreneurial spirit to municipality management were presented in the book “Reinventing government”. According to them, municipality authorities should [Osborne, Gaebler 2005, p. 43]:

- create the competition between the suppliers of public services,
- give some empowerment to citizens,
- assess the efficiency and quality of institutions of public services based on results,
- be guided by a municipality’s mission, not just by rules and regulations,
- treat citizens as customers,
- prevent the emergence of problems instead of seeking remedies after the emergence of these problems,
- focus attention on the acquisition of money and not spending it,
- allow citizens to cooperate in management through decentralization,
- promote market rather than bureaucratic mechanisms,
- activate the cooperation of all sectors: public, private and social.

Polish municipalities should take actions to realize these principles for a more efficient municipality management. This would reflect the current trend of

implementation of the best practices and management techniques from the private sector in the public sector.

References

- Borys T., *Podstawy programowania ekonomii rozwoju miast*, [in:] J. Słodczyk (Ed.), *Ekologiczne aspekty gospodarki miejskiej i nowe instrumenty w zarządzaniu miastem*, Wydawnictwo Uniwersytetu Opolskiego, Opole 2000.
- Brol R., *Miasto – społeczeństwo, gospodarka, przestrzeń*, [in:] R. Brol (Ed.), *Ekonomika i zarządzanie miastem*, Wydawnictwo Akademii Ekonomicznej im. Oskara Langego we Wrocławiu, Wrocław 2004.
- Broszkiewicz R., *Podstawy gospodarki miejskiej*, Wydawnictwo Akademii Ekonomicznej im. Oskara Langego we Wrocławiu, Wrocław 1997.
- Duda J. et al., *Mierzenie ilości i jakości usług publicznych jako element Programu Rozwoju Instytucjonalnego*, Instytut Badań nad Gospodarką Rynkową, Warszawa 2004, http://msap.uek.krakow.pl/doki/publ/pri_mi.pdf (accessed: 07.01.2012).
- Kaplan R.S., Norton D.P., *Strategiczna Karta Wyników. Jak przełożyć strategię na działanie*, Wydawnictwo Naukowe PWN, Warszawa 2012.
- Markowski T., *Zarządzanie rozwojem miast*, Wydawnictwo Naukowe PWN, Warszawa 1999.
- Mitchell A., Owsiany M., Zawicki M., *Wskaźniki ilościowe w obszarach zarządzania*, 2004, http://msap.uek.krakow.pl/doki/publ/pri_wi.pdf (accessed: 07.01.2012).
- Nieplowicz M., *Koncepcja zrównoważonej karty wyników dla miasta na prawach powiatu*, [in:] *Controlling i audyt wewnętrzny w usprawnianiu zarządzania*, Wydawnictwo Uniwersytetu Szczecińskiego, Szczecin 2005.
- Osborne D., Gaebler T., *Rządzić inaczej. Jak duch przedsiębiorczości przenika i przekształca administrację publiczną*, Media Rodzina, Poznań 2005.
- Pęski W., *Zarządzanie zrównoważonym rozwojem miast*, Arkady, Warszawa 1999.
- Raczyński J., *Problemy występujące w realizacji polityki zrównoważonego rozwoju miast Łodzi*, [in:] J. Słodczyk, Z. Jakubczyk (Eds.), *Zarządzanie gospodarką miejską i prawne podstawy funkcjonowania miasta*, Uniwersytet Opolski, Opole 2002.
- Sztando A., *Monitoring wdrażania strategii rozwoju gminy miejskiej – wybrane aspekty*, [in:] J. Słodczyk, D. Rajchel (Eds.), *Przekształcenia strukturalne miast i zrównoważony rozwój gospodarki miejskiej*, Wydawnictwo Uniwersytetu Opolskiego, Opole 2008.
- Wojciechowski E., *Zarządzanie w samorządzie terytorialnym*, Difin, Warszawa 2003.

PRZYKŁADOWE MIERNIKI SŁUŻĄCE DO OCENY ZARZĄDZANIA MIASTEM

Streszczenie: Celem artykułu jest przedstawienie istoty miasta oraz wskazanie wybranych mierników służących do oceny zarządzania miastem. Mierniki te zostały podzielone na dwie grupy, a mianowicie na mierniki, które będzie można zastosować do oceny zarządzania miastem jako całością oraz na mierniki służące do oceny zarządzania urzędem miasta. W podsumowaniu wskazano zasady wprowadzenia przedsiębiorczości do zarządzania miastem.

Słowa kluczowe: miasto, zarządzanie miastem, mierniki.